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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,286	06/16/2005	Paul Stephen Stacey	540-571	2638
23117 7590 03/24/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
HAUTH, GALEN H				
ART UNIT		PAPER NUMBER		
1791				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,286

Applicant(s)

STACEY ET AL.

Examiner

GALEN HAUTH

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 13-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Acknowledgment is made to applicant's amendment of claim 8, cancellation of claim 9, and the addition of claims 18-21. No new matter has been added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 8, 13, 17, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Charbonnet (PN 5209881).

- a. With regards to claim 8, Charbonnet teaches a method for curing composite articles in which the article is placed in a temperature controlled oven (vessel) and cures the material while monitoring the temperature of the oven with at least one infrared pyrometer sensor (abstract). Charbonnet teaches that the pyrometer is at a distance of twelve to eighteen inches from the article (col 3 In 20-24, the examiner is interpreting the distance away from the article to satisfy the claim limitation of being remote from the article.) Charbonnet teaches that sensors may be connected to meter or gauges and their individual outputs correlated to panel temperature (col 4 In 33-35, due to Charbonnet using a moving oven this corresponds to having a constant curing temperature at certain points in the oven rather than a constant temperature throughout the oven.)

Charbonnet teaches that it is desirable to keep the gelation point in a specific spot within the oven (col 3 In 54-56, given this it would follow that the gelation point is a specific temperature which means that Charbonnet is controlling the oven to have a constant cure temperature.) Charbonnet teaches adjusting the oven temperature in response to sensor readings (abstract).

b. With regards to claim 13, Charbonnet teaches a method for curing composite articles in which the article is placed in a temperature controlled oven (vessel) and cures the material while monitoring the temperature of the oven with at least one infrared pyrometer sensor (abstract). Charbonnet teaches that the pyrometer is at a distance of twelve to eighteen inches from the article (col 3 In 20-24, the examiner is interpreting the distance away from the article to satisfy the claim limitation of being remote from the article.) Charbonnet teaches that sensors may be connected to meter or gauges and their individual outputs correlated to panel temperature (col 4 In 33-35, due to Charbonnet using a moving oven this corresponds to having a constant curing temperature at certain points in the oven rather than a constant temperature throughout the oven.) Charbonnet teaches that it is desirable to keep the gelation point in a specific spot within the oven (col 3 In 54-56, given this it would follow that the gelation point is a specific temperature which means that Charbonnet is controlling the oven to have a constant cure temperature.) Charbonnet teaches adjusting the oven temperature in response to sensor readings (abstract).

c. With regards to claim 21, Charbonnet teaches monitoring the temperature of the material (abstract, the limitation of "to determine the location and existence of voids during curing" is not given patentable weight as this limitation provides an intended purpose for a step rather than a patentable step in the process and Charbonnet teaches performing the step of monitoring the temperature of the material.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charbonnet (PN 5209881) as applied to claim 13 above, and further in view of Whipple et al. (PN 6132084).

a. With regards to claim 14, Charbonnet as applied to claim 13 above teaches a method for curing a composite material by placing the material in an

oven that is temperature controlled by infrared devices to maintain consistency over the oven to cure the material. Charbonnet does not teach that the infrared device is located outside of the vessel.

b. Whipple teaches a infrared non-contact self calibrating measurement device (abstract). Whipple teaches that the invention provides for non-contact temperature measurements of objects being disposed in a chamber of an appliance with means of transmitted infrared radiation in a scan pattern and detection for accurate temperature measurements thereof and makes use of already present components to reduce complexity (col 12 ln 38-54). Whipple teaches that the device is located outside of the chamber of the oven (col 2 ln 32-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the scanning infrared radiation system outside of the vessel as taught by Whipple in the process taught by Charbonnet, because the Whipple system provides improved responsive non-contact measurement (col 2 ln 50-60) while scanning across all areas of the chamber (col 5 ln 46-50).

c. With regards to claim 17, Charbonnet as applied to claim 13 above teaches a method for curing a composite material by placing the material in an oven that is temperature controlled by infrared devices to maintain consistency over the oven to cure the material. Charbonnet does not teach that the temperature across the whole of the material is measured.

d. Whipple teaches a infrared non-contact self calibrating measurement device (abstract). Whipple teaches that the invention provides for non-contact

temperature measurements of objects being disposed in a chamber of an appliance with means of transmitted infrared radiation in a scan pattern and detection for accurate temperature measurements thereof and makes use of already present components to reduce complexity (col 12 ln 38-54). Whipple teaches that the device is located outside of the chamber of the oven (col 2 ln 32-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the scanning infrared radiation system outside of the vessel as taught by Whipple in the process taught by Charbonnet, because the Whipple system provides improved responsive non-contact measurement (col 2 ln 50-60) while scanning across all areas of the chamber (col 5 ln 46-50).

7. Claims 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charbonnet as applied to claim 13 above, and further in view of Schenck et al. (PN 4463437)

a. With regards to claim 16, Charbonnet as applied to claim 13 above teaches a method for curing a composite material by placing the material in an oven that is temperature controlled by infrared devices to maintain consistency over the oven to cure the material. Charbonnet does not teach that the infrared device is a camera.

b. Schenck teaches the use of an infrared camera system to better enable surface temperature measurements in hot processes (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the infrared camera system of Schenck as the infrared sensor of

Charbonnet, because Schenck teaches that the camera system provides automatic acquisition, validation, and preprocessing of thermal images from the camera, defines and extracts key features of thermal images, reports, retrieves, and archives data.

c. With regards to claims 18, while Charbonnet in view of Schenck does not teach that the camera is movable it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the camera of Charbonnet in view of Schenck movable as "that a claimed device is portable or **movable** is not sufficient by itself to patentably distinguish over an otherwise old device unless there are new and unexpected results." In re Lindberg, 194 F.2d 732, 93 USPQ 23 (CCPA 1952) MPEP 2144.04.

d. With regards to claim 19, Charbonnet teaches monitoring the temperature at a critical point (col 3 ln 32-34, a critical point being a specific point) as well as several different points (col 4 ln 6-26).

8. Claims 8, 13, 14, 15, 17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Handel et al. (PN 5345397) in view of Whipple et al. (PN 6132084).

a. With regards to claim 8, Handel teaches a method for curing fiber reinforced composite material by placing the material in a temperature controlled vessel and curing the material (abstract). Handel does not teach that the control system comprises an infrared device remote from the material.

- b. Whipple teaches a infrared non-contact self calibrating measurement device (abstract). Whipple teaches that the invention provides for non-contact temperature measurements of objects being disposed in a chamber of an appliance with means of transmitted infrared radiation in a scan pattern and detection for accurate temperature measurements thereof and makes use of already present components to reduce complexity (col 12 ln 38-54). Whipple teaches that the device is located outside of the chamber of the oven (col 2 ln 32-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the scanning infrared radiation system outside of the vessel as taught by Whipple in the process taught by Handel, because the Whipple system provides improved responsive non-contact measurement (col 2 ln 50-60) while scanning across all areas of the chamber (col 5 ln 46-50).
- c. With regards to claim 13, Handel teaches a method for curing fiber reinforced composite material by placing the material in a temperature controlled vessel and curing the material at a constant temperature (abstract). Handel does not teach that the control system comprises an infrared device remote from the material.
- d. Whipple teaches a infrared non-contact self calibrating measurement device (abstract). Whipple teaches that the invention provides for non-contact temperature measurements of objects being disposed in a chamber of an appliance with means of transmitted infrared radiation in a scan pattern and detection for accurate temperature measurements thereof and makes use of

already present components to reduce complexity (col 12 ln 38-54). Whipple teaches that the device is located outside of the chamber of the oven (col 2 ln 32-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the scanning infrared radiation system outside of the vessel as taught by Whipple in the process taught by Handel, because the Whipple system provides improved responsive non-contact measurement (col 2 ln 50-60) while scanning across all areas of the chamber (col 5 ln 46-50).

e. With regards to claim 14, Whipple teaches that the device is located outside of the chamber of the oven (col 2 ln 32-33).

f. With regards to claim 15, Handel teaches that the vessel is an autoclave (abstract).

g. With regards to claim 17, Whipple teaches scanning across all areas of the chamber (col 5 ln 46-50, by scanning across all areas of the chamber the entire whole of the material is monitored.)

h. With regards to claim 20, Handel teaches monitoring the temperature of the vessel during curing as well as the time period of heating prior to the curing of the resin as seen in Fig. 2 in which the resin cures at a desired constant temperature of 350.

i. With regards to claim 21, Handel teaches monitoring the temperature of the material (abstract, the limitation of "to determine the location and existence of voids during curing" is not given patentable weight as this limitation provides an intended purpose for a step rather than a patentable step in the process and

Handel teaches performing the step of monitoring the temperature of the material.)

9. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Handel et al. (PN 5345397) in view of Whipple et al. (PN 6132084) as applied to claim 13 above, and further in view of Schenck et al. (PN 4463437).

a. With regards to claim 16, Handel in view of Whipple as applied to claim 13 above teaches a method for curing a composite material by placing the material in an autoclave that is temperature controlled by infrared devices to maintain temperature in the autoclave to cure the material. Handel in view of Whipple does not teach that the infrared device is a camera.

b. Schenck teaches the use of an infrared camera system to better enable surface temperature measurements in hot processes (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the infrared camera system of Schenck as the infrared sensor of Handel in view of Whipple, because Schenck teaches that the camera system provides automatic acquisition, validation, and preprocessing of thermal images from the camera, defines and extracts key features of thermal images, reports, retrieves, and archives data.

c. With regards to claims 18, while Handel in view of Whipple and Schenck does not teach that the camera is movable it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the camera of Handel in view of Whipple and Schenck movable as "that a claimed device is

portable or **movable** is not sufficient by itself to patentably distinguish over an otherwise old device unless there are new and unexpected results." In re Lindberg, 194 F.2d 732, 93 USPQ 23 (CCPA 1952) MPEP 2144.04.

Response to Arguments

10. Applicant's arguments filed 01/21/2009 have been fully considered but they are not persuasive.

a. With regards to applicant's arguments that Charbonnet does not teach a constant curing temperature, Charbonnet teaches adjusting the oven temperature (abstract, Charbonnet teaches adjusting the line speed **or** oven temperature in the last two lines of the abstract) accordingly to maintain a desired temperature profile (col 4 ln 6-26).

b. With regards to applicant's arguments that the references of Charbonnet and Whipple are not combinable, the teachings of Charbonnet and Whipple are both directed to infrared measurement of temperature. While there may be aspects of the Whipple reference that are directed to a different process, the material and teachings of relevance in the two references are related as Whipple teaches a system that provides improved responsive non-contact measurement of temperature (col 2 ln 50-60) while scanning across all areas of the chamber (col 5 ln 46-50).

c. With regards to applicant's arguments that the references of Charbonnet and Schenck are not combinable, the teachings of Charbonnet and Schenck are both directed to infrared control of temperature. While there may be aspects of

the Schenck reference that are directed to a different process, the material and teachings of relevance in the two references are related as Schenck teaches that the camera system provides automatic acquisition, validation, and preprocessing of thermal images from the camera, defines and extracts key features of thermal images, reports, retrieves, and archives data.

d. With regards to applicant's arguments that the references of Handel and Whipple are not combinable, the teachings of Handel and Whipple are both directed to constant temperature measurement and monitoring. While there may be aspects of the Whipple reference that are directed to a different process, the material and teachings of relevance in the two references are related as Whipple teaches a system that provides improved responsive non-contact measurement of temperature (col 2 In 50-60) while scanning across all areas of the chamber (col 5 In 46-50).

e. With regards to applicant's arguments that the references of Handel and Schenck are not combinable, the teachings of Handel and Schenck are both directed to constant temperature measurement and monitoring. While there may be aspects of the Schenck reference that are directed to a different process, the material and teachings of relevance in the two references are related as Schenck teaches that the camera system provides automatic acquisition, validation, and preprocessing of thermal images from the camera, defines and extracts key features of thermal images, reports, retrieves, and archives data.

11. Applicant's arguments, see response, filed 01/21/2009, with respect to the rejection of claim 15 under 35 USC 103 over Charbonnet have been fully considered and are persuasive. The rejection of claim 15 over Charbonnet has been withdrawn.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **GALEN HAUTH** whose telephone number is (571)270-5516. The examiner can normally be reached on **Monday to Thursday 8:30am-5:00pm ET**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791